The Neotropical Katydid Genus Raggophyllum (Orthoptera; Tettigoniidae; Phaneropterinae)

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While studying the phaneropterine collection of the Academy of Natural Sciences of Philadelphia, I encountered a new neotropical genus consisting, at present, of one species represented by a series of fourteen males and one female. All are in excellent condition.

In size, general appearance, and tegmental form the genus resembles most species of *Microcentrum*. It differs from that genus in its narrow fastigia, conchate tympana on the cephalic tibiae, greater number of posterior femoral and tibial spines, non-stylate upcurved subgenital plate of the male, and distally-produced basal lobe of the ovipositor of the female.

The following symbols indicate ownership of the specimens: ANSP—Academy of Natural Sciences of Philadelphia; LACM—Los Angeles County Museum; Mich—University of Michigan.

Raggophyllum new genus

Diagnosis. Size moderately large (49–61 mm). Fully alate; wings extending nearly a body length beyond tip of abdomen. Auritate cups shielding tympana on cephalic tibiae. Exceptionally great number of spines on inner and outer ventral margins of posterior femora and tibiae.

Description. Head. In lateral aspect, dorsum of eyes situated just below dorsum of head. Greatest width of face approximately 0.75 times its length. Frontal fastigium moderately narrow; vertical fastigium equally narrow, approximating but not touching or extending beyond frontal fastigium.

Pronotum. Surface smooth, lacking any punctation. Lateral carinae obsolete. Pronotal lobes approximately 1.3 times deeper than broad; with two transverse sulci anterior of midline.

Thorax. Mesosternal and metasternal lobes moderately developed.

Wings. Elongate. Posterior pair extending beyond anterior pair by at least 6 mm. Anterior wing 4.0–4.4 times longer than wide. Stridulatory field as figured (Fig. 2).

Legs. Distinctive symmetrical conchate tympanum on both faces of cephalic tibia. Posterior femur 6.7–7.8 times longer than wide. 11 to 23 spines on inner ventral margin of posterior femur, 16 to 28 spines on outer ventral margin. 16 to 60 spines on inner ventral margin of posterior tibia, 22 to 44 spines on outer ventral margin.

Abdomen. Male terminalia complex. Cerci unspecialized. Male subgenital plate non-stylate, greatly modified. Ovipositor short, gradually upcurved, apically crenulate. Basal lobe of ovipositor distally produced.

Type species, *Raggophyllum spinosum* n. sp.

Discussion. In size, general shape, and tegmental form, *Raggophyllum* is most similar among the phaneropterine genera of the New World to *Microcentrum*. *Microcentrum*, however, lacks the conchate tympana and the great number of spines on the ventral margins of the posterior femora and tibiae. Moreover, its frontal and vertical fastigia are much wider, the lateral carinae of the pronotum are strongly expressed, and the mesosternal and metasternal lobes are greatly developed.

The conchate tympanum is noted in various shapes and stages of development in at least fifteen other neotropical genera of phaneropterines. They are *Aegimea, Cosmophyllum, Cnemidophyllum, Eupeucestes, Hyperphrona, Itarissa, Lamprophyllum, Peucestes, Phoebolampta, Phyllolophus, Posidippus, Rossophyllum, Steirodon,* and *Steirodonopis*. The only genera among these with which *Raggophyllum* might be confused are *Lamprophyllum* and *Rossophyllum*. *Rossophyllum* is easily distinguished by its broad, diaphanous, banded tegmina. *Lamprophyllum* is distinguished in the following respects: its tegmina are glossy and broader than those of *Raggophyllum;* it lacks the tympanal shield on the outer face of the tibia; and its frontal and vertical fastigia are broader.

The genus is named after Dr. David R. Ragge in recognition of his outstanding work on the Subfamily Phaneropterinae.

Distribution. The range of *Raggophyllum* is based on the only known species, *R. spinosum*.

Raggophyllum spinosum n. sp. (Fig. 1)

Diagnosis. This species is easily identified by the symmetrical auritate cups shielding both faces of the tympanum, the great number of spines on the ventral margins of the posterior femora and tibiae, the lateral edge of the terminal tergite of the male which is drawn out over the base of each cercus as a finger-like projection, the subgenital plate of the male which upcurves acutely between the cerci, and the basal lobe of the ovipositor of the female which is drawn out as a bilaterally-compressed, posteriorly-directed process.

Types.—*Holotype* ♂, Peru, Huallaga, Aguaytia R. 400 m IX–1961 [ANSP]. *Allotype* ♀, same data as holotype [ANSP].

Paratypes 13 ♂. Peru, Loreto, Rio Napo VI–8–1920 (H. S. Parish) 1 ♂ [ANSP]; Peru, Huallaga, Aguaytia R. 400 m VII, VIII, IX–1961 5 ♂ [ANSP]; Peru, Huanaco, Leonpampa 110 km E. Huanaco (Tropical Jungle) XII–1937 (Felix Woytkowski) 1 ♂ [ANSP]; Peru, Pasco, Chontilla 22 km SE. Iscozazin VII–9–1961 (F. S. Truxal) 1 ♂ [LACM]; Peru, Pasco, Chontilla 22 km S. Iscozazin VIII–1–15–1961 (R. Etheridge) 4 ♂ [LACM]; Bolivia, Beni, Rurrenabaque, 227 m "Low Tropical Region" X–10–23–1956 (Luis E. Peña) 1 ♂ [Mich].

Description. Head. Dorsum of eyes situated just below dorsum of head; median length of eyes about one-fourth length of face. Frontal fastigium moderately narrow, rounded at tip; vertical fastigium equally narrow, bilaterally compressed, with a dorso-median sulcus, and approximating but not touching or extending beyond tip of frontal fastigium.

Pronotum. Surface smooth, lacking any punctation. Median length/width index pronotal disc 1.14 (mean of males), 1.12 (female). Lateral carinae of pronotal disc obsolete. Lateral lobes deeper than broad, with two transverse sulci situated on

the anterior half of lobe. Distinct elevated border extending around entire edge of pronotum, but weakly expressed at posterior margin of disc.

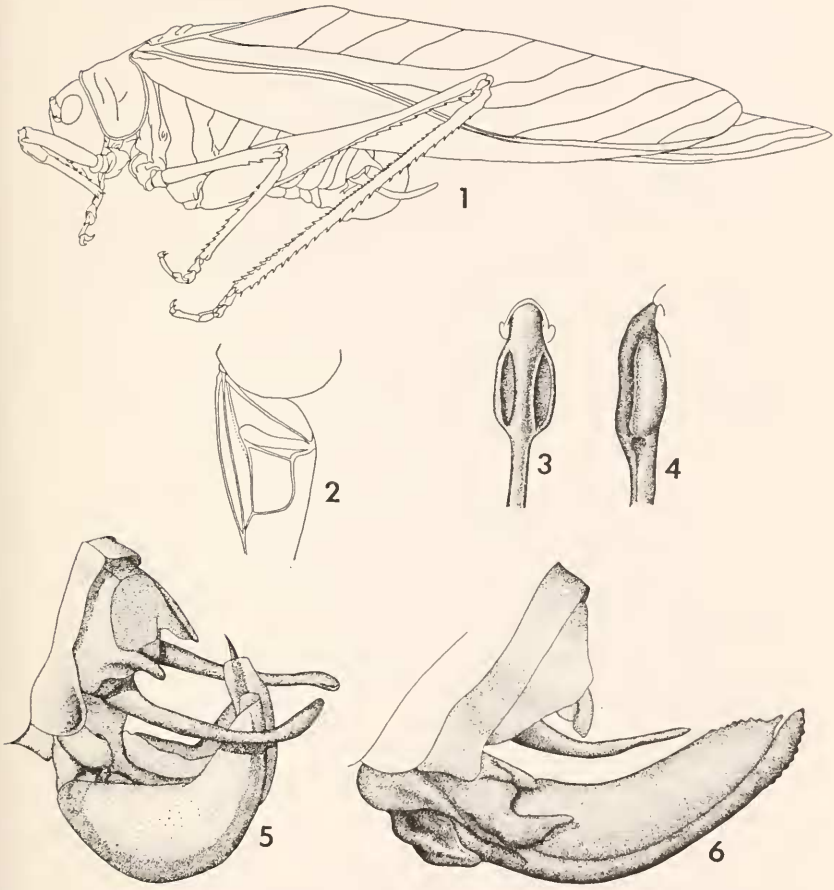
Thorax. Mesosternal lobes moderately developed, lateral edges convex, trigonal. Metasternal lobes moderately developed, laterally convex, rounded.

Legs. Cephalic coxal spine present. Cephalic femur with 2 to 6 spines along inner ventral margin. Cephalic tibiae bearing symmetrical auritate, conchate structures directed forward, shielding the tympana (Figs. 3, 4). Median femur with 1 to 5 spines along outer ventral margin. Ventral margins of posterior femora and tibiae armed with great number of small spines. 11–23 spines on inner ventral margin of posterior femur, 16–28 spines on outer ventral margin. 16–60 spines on inner ventral margin of posterior tibia, 22–44 on outer ventral margin. Posterior femora about 7.4 (♂) and 7.2 (♀) times longer than wide.

Wings. Anterior wing about 4.2 (♂) and 4.0 (♀) times longer than wide. Costal margin of posterior wing in folded position colored orange to amber. Costal vein of forewing nearly obscure or weakly expressed.

External genitalia. Male. Terminal tergite medially depressed and flattened; each lateral edge of tergite extending over base of each cercus as a short finger-like projection. Supra-anal plate slightly wider at its base than long, rounded at apex, arising from apical, medial edge of terminal tergite, and directed ventro-caudad. Cerci long, narrow, sinuous, circular in cross-section, with a ridge of about eight fine preapical teeth along median surface near apex, the distal two or three teeth being larger than the other teeth. Subgenital plate acutely upcurved between cerci as two custodite, sharp, lanceolate structures, each being surrounded by a translucent, thinly-sclerotized, crescentic outgrowth of the base of the subgenital plate. Subgenital plate extending dorso-cephalad over terminal tergite; tips of sabers barely, if at all, extending beyond crescents (Fig. 5 *).

* Fig. 5 shows subgenital plate of male pulled ventrad to expose the inner face of right saber and to show how the crescentic outgrowth envelops it. In all other specimens observed the subgenital plate upcurves acutely over the dorsum of the abdomen.



FIGS. 1–6. *Raggophyllum spinosum* n. sp. 1, male; 2, stridulatory field of male; 3, 4, tympanum on left cephalic tibia; 3, frontal aspect; 4, lateral aspect; 5, tip of abdomen, male, dorsoposterior aspect; 6, tip of abdomen, female, lateral aspect.

Localities of specimens. Figs. 1, 2, 3, 4, and 6, Peru, Huallaga, Aguaytia R. 400 m; Fig. 5, Bolivia, Dept. Beni, Rurrenabaque, 227 m.

Female. Terminal tergite truncate. Ovipositor short, gradually upcurved; ventral valve extending slightly beyond dorsal valve; edge of ovipositor distally finely scalloped with about fifteen teeth at apex only. Basal lobe of ovipositor laterally compressed, distinctly elongated posteriorly and away from body, with the appearance of the toe of a boot (Fig. 6). Subgenital plate slightly longer than its basal width; apically narrow, blunt.

Internal genitalia. Not observed.

Color. General body color katydid green. Eyes uniform dark brown. Costal border of posterior wing in folded position orange to amber. Characteristic dark brown marks on ventral surface at apex of posterior femur and at geniculum of posterior leg. (The face, thorax, abdomen, and anterior portion of the tegmen seem to have a strong tendency to lose green pigment, as ten specimens are yellow or almost white in these areas.)

Variation. Little variation other than size is noted. The female specimen at hand lacks the great number of spines on the posterior tibiae, having only 22 and 25 on the outer ventral margins, and 16 and 17 on the inner ventral margins. The males average 39 spines on the outer ventral margins and 51 on the inner ventral margins.

Distribution. *Raggophyllum spinosum* has a range of at least 700 miles (between Rio Napo, Loreto Province, Peru and Rurrenabaque, Beni Department, Bolivia). It is known only from east of the Andes Mountains.

Measurements. Values listed are means (mm). Total length ♂ 55.2, ♀ 61.0; length pronotal disc ♂ 5.8, ♀ 6.4; width pronotal disc ♂ 5.0, ♀ 5.7; length posterior femur ♂ 23.9, ♀ 26.5; width posterior femur ♂ 3.2, ♀3.7; length anterior wing ♂ 42.3, ♀ 47.0; width anterior wing ♂ 10.1, ♀ 11.7; length ovipositor ♀ 6.9.